DMXking.com

eDMX4 DIN Interface

USER MANUAL

DMXking.com • JPK Systems Limited • New Zealand
0093-700-3.0

TABLE OF CONTENTS

1. Introduction 1

Main Features 1

2. Exterior View 1

Front View 1

Status LED Table 2

3. Default Configuration 2

4. Configuration Utility 2

5. Compatible Software 7

Controllers 7

Media Servers / VJ 8

Visualizers 8

Mobile Apps 8

6. Updating Firmware 9

7. Technical Specifications 10

8. Warranty 10

DMXking.com Hardware Limited Warranty 10

9. Declarations (FCC & CE) 10

Federal Communications Commission (FCC) Declaration of Conformity 10

EEC Declaration 11

1. INTRODUCTION

Thanks for purchasing a DMXking.com product. Our aim is to bring you high quality products with great features we know you'll appreciate. We ship only what's required which is why there's no CD or printed manual in the box, this is part of our commitment to minimizing environmental impact which also translates into end user savings.

Model	**Highlights**
eDMX4 DIN	4 Universe DMX512-A output or input. RDM functionality. Merge 2 ArtNet streams per channel.

MAIN FEATURES

- Supported operating systems: Any with Ethernet networking support. Windows, MAC OS, Linux, BSD…
- Ethernet 10/100Mbps interface with Auto MDI-X
- Wide input power range 8-28Vdc
- DMX512 **Out** or DMX512 **In** functionality selectable on each port.
- Art-Net broadcast, Art-Net II & III unicast, sACN/E1.31 Multicast and sACN Unicast support.
- E1.20 RDM over Art-Net support.
- User configuration of Art-Net Node short and long names.
- Available with RJ45 or screw terminal DMX connections.
- Fully compatible with ***ALL*** software and hardware that supports Art-Net and E1.31 sACN protocols.
- Configuration utility (Windows platform only .NET 3.5 – contact support for other OS).
- Firmware update through configuration utility.

2. EXTERIOR VIEW

FRONT VIEW

Network 10/100Mbps RJ45 socket. Pluggable terminal block for 8-28Vdc power input. Four RJ45 sockets or 3way pluggable terminal block connectors for DMX512. Optional DIN rail mount brackets.

STATUS LED TABLE

LED	Indication
Protocol	Protocol activity. Flash Yellow = Art-Net/sACN. Solid Yellow = Firmware Update mode.
Network	Network activity. Green = Link, Flash = Traffic

3. DEFAULT CONFIGURATION

All eDMX1/4 DIN units ship with default IP address settings. Please reconfigure for your requirements before use!

Parameter	Default Setting
IP Address	192.168.0.112
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.254

DMX512 and Art-Net configuration parameters are also configured with default values.

Parameter	Default Setting
Network Mode	Custom IP address
*Art-Net Operation Mode	DMX Transmitter
*Art-Net DMX Universe	0 [Subnet 0, Universe 0]
*Art-Net Merge Mode	HTP
*DMX512 Update Rate	40 [DMX512 frames per second]
*RDM Discovery Packet Spacing	1
*RDM Discovery Period	0
Broadcast Threshold	0 [Force Art-Net 1 broadcast]. Don't change this unless you want Art-Net 2/3 unicast.

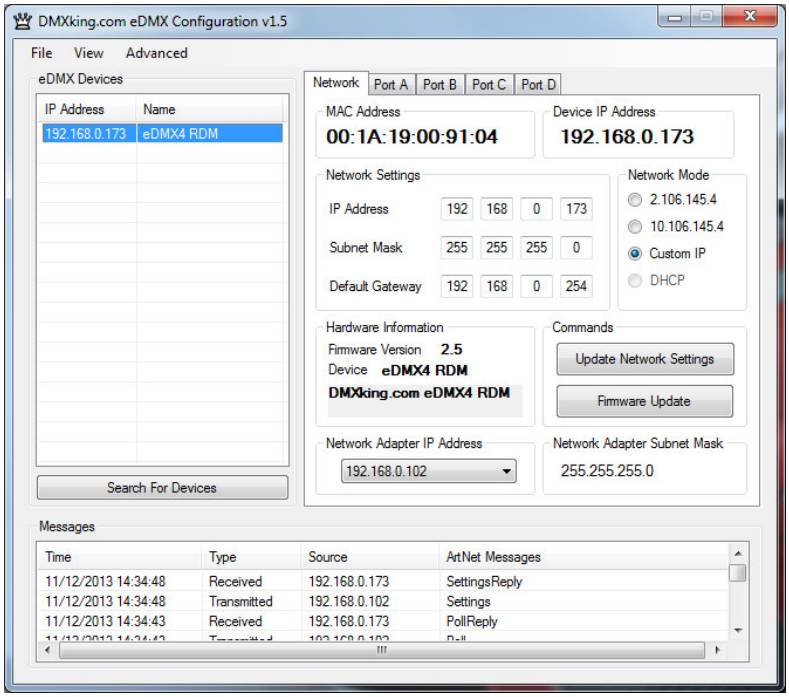
*These parameters are per port.

4. CONFIGURATION UTILITY

The eDMX Configuration utility provides a simple interface to all device parameters. Typically these are set once during initial configuration and left untouched. If you are not confident in setting up network IP Address, Subnet Mask and Default Gateway parameters please get in touch with DMXking.com support and we'll walk you through the process.

Special note: Once you've finished configuring your eDMX product close the application before starting your lighting control application if it's run from the same computer.

NETWORK TAB



Before starting the eDMX Configuration utility please ensure your computer has appropriate IPv4 network settings, for example IP 192.168.0.100 Subnet 255.255.255.0 Gateway 192.168.0.254.

Upon startup eDMX devices on the same subnet are automatically detected and displayed by IP address. You can re-poll for new devices or just check the communications is okay by clicking “Search For Devices”.

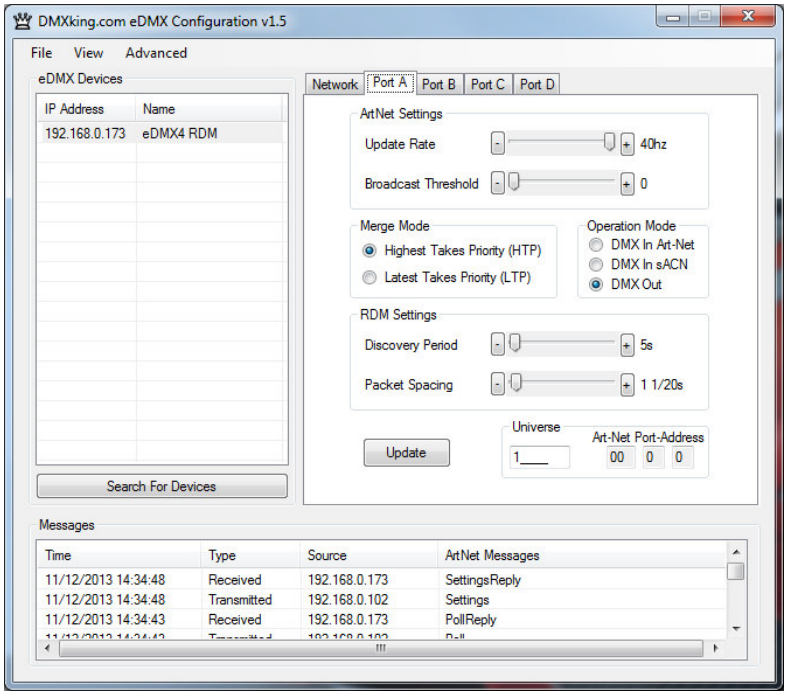
Click on the desired device’s IP address in the list and all Settings will be retrieved. Note that if no response is received the settings will be greyed out. An activity box shows both transmitted and received messages to help with diagnosing communication issues. If your network configuration has multiple adapters and or IP addresses you need to select the same network range as the eDMX from the Network Adapter IP Address dropdown box and also ensure the subnet mask is appropriate.

Make changes to the applicable settings on the Network tab then click “Update Network Settings”. If you select the Art-Net 2.x.y.z or 10.x.y.z addressing scheme please note the custom IP address will still be valid during initial boot stages (i.e. firmware updates are always on the Network Settings address, not 2.x.y.z or 10.x.y.z) The eDMX unit will reboot after network any settings changes.

Selecting “Firmware Update” will prompt for an appropriate firmware file and upload upon confirmation. A built in boot loader permits updating of the eDMX firmware. Note only signed encrypted firmware files from DMXking.com can be successfully loaded to ensure you won’t brick your device by accident. Future firmware releases for this product will be in the form 0083-500-VersionMajor.VersionMinor.enc

The Port A - D tabs provide access to the DMX512 port parameters.

PORT TAB



Make changes to the applicable Port settings then click “Update”.

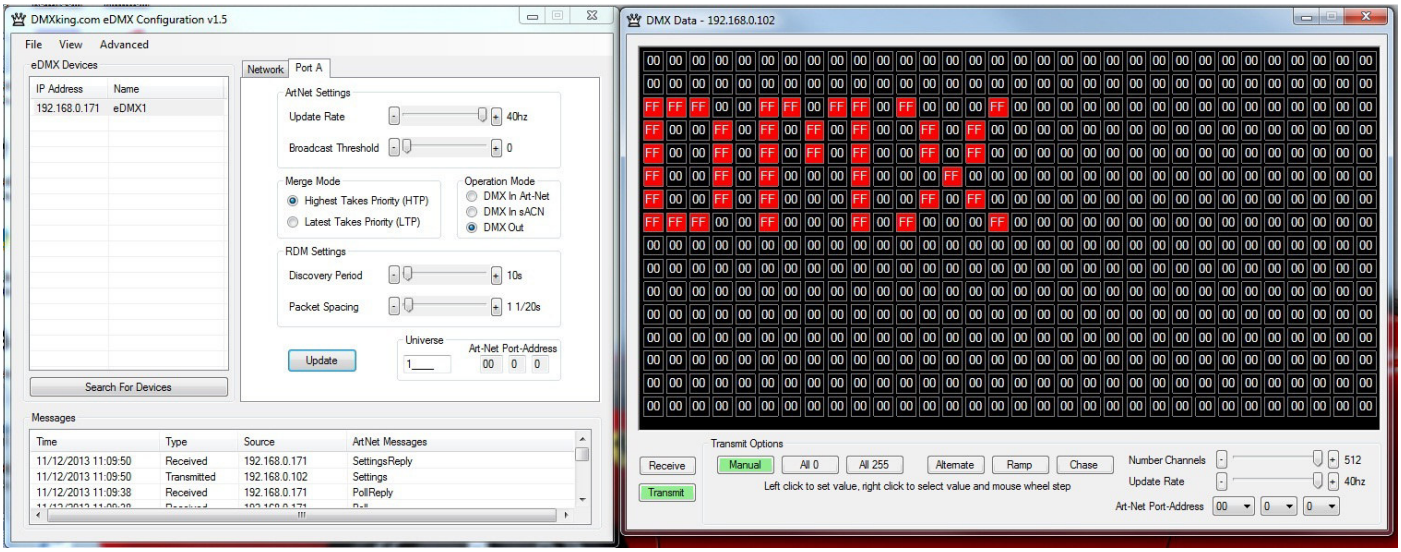
The following table explains each of the settings parameters.

Parameter	**Usage**
MAC Address	Factory programmed Ethernet MAC address
IP Address	IPv4 network address
Subnet Mask	Subnet mask, typically 255.0.0.0, 255.255.0.0 or 255.255.255.0 for class A,B & C respectively
Default Gateway	Address of network gateway (router) for communications beyond local subnet
Network Mode	Custom IP, Art-Net 2.x.y.z , Art-Net 10.x.y.z
Operation Mode	DMX In Art-Net, DMX In sACN (multicast only), DMX Out (both Art-Net and sACN simultaneously). eDMX4 TX models only support DMX Out.
DMX Universe	sACN 1-63999 which is translated to an Art-Net Port-Address (Net:Sub:Uni). Setting DMX Universe = 1 results in sACN Universe = 1 and Art-Net 00:0:0 (Universe 1 = Art-Net Universe 0)
Merge Mode	HTP (Highest Takes Precedence - dimmers), LTP (Last Takes Precedence – moving lights)
Update Rate	DMX512 output frame rate/frequency
RDM Packet Spacing	Number of 1/20sec intervals enforced minimum between RDM messages on DMX line
RDM Discovery Period	Number of seconds between internally initiated RDM Discovery attempt. Setting Discovery Period = 0s will ***disable RDM*** which is the default.
Broadcast Threshold	0 = Force Art-Net broadcast mode, > 0 Art-Net II/III unicast.

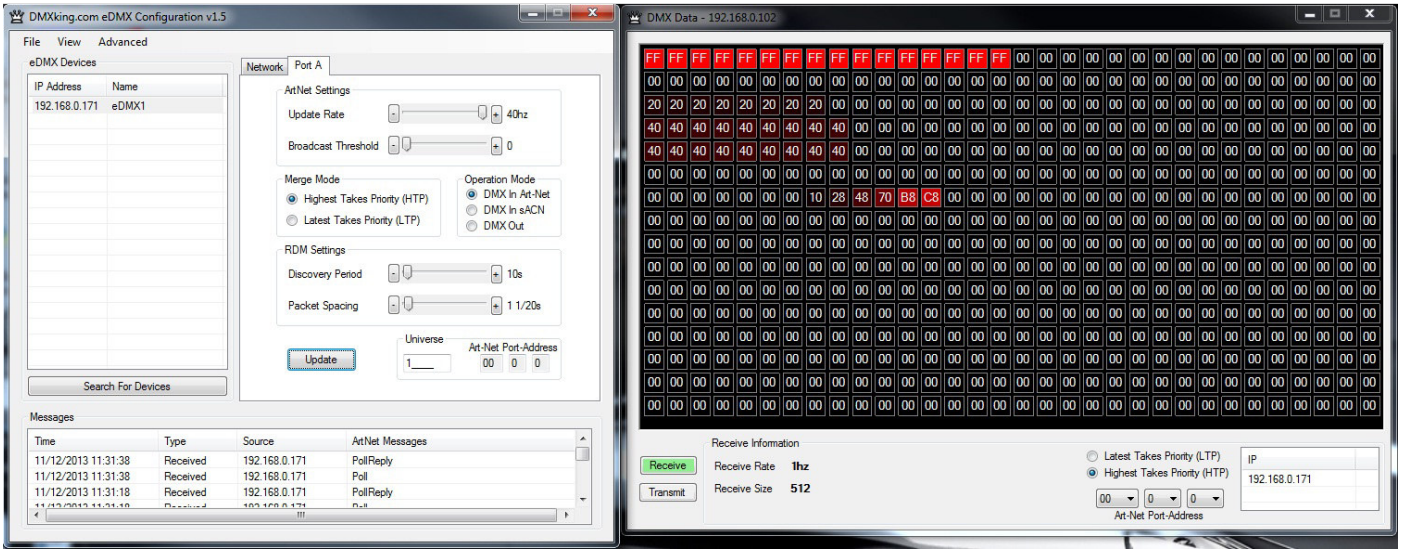
DMX DISPLAY FUNCTION

Select **View | DMX Display** for a simple DMX512 test utility. To generate an Art-Net output stream click Transmit then select one of the 6 Transmit Options and change Art-Net Universe as applicable. When in Manual mode you can click on any of the channels (represented by small boxes with hexadecimal channel level inside) to set ON level and double click to set zero. The mouse scroll wheel adjusts a channel by a defined increment. Channel number increases left to right, top to bottom and the roaming tool tip provides information about a specific channel.

Both the ON level and mouse wheel step can be set by right clicking anywhere within the black display area. Number of channels transmitted and the refresh rate can be adjusted using the applicable sliders adjacent to transmit options.



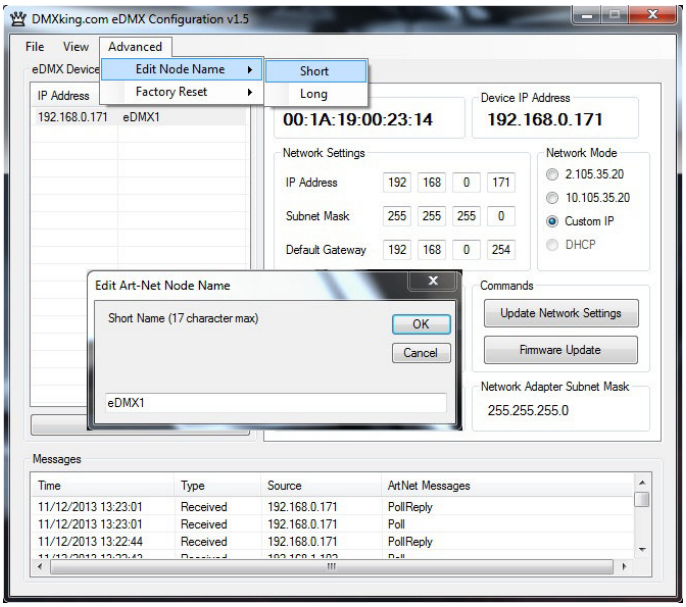
Changing to Receive mode will display the selected Art-Net universe number with merged streams if more than 1 is present. Note Art-Net II unicast is not supported meaning only Art-Net broadcast streams are displayed.



The DMX Display utility works with any manufacturers Art-Net hardware and can be useful for diagnostics and simple testing of DMX512 fixtures.

ART-NET NODE NAME

The Art-Net protocol supports device naming which can make larger installations more manageable. Both Short Name (17 characters) and Long Name (63 characters) for an eDMX Device can be modified using the **Advanced | Edit Node Name** dialog.



FACTORY RESET

This is a last resort option if for whatever reason incorrect or forgotten device network settings have rendered your device unusable. A word of warning – this function will factory reset ***ALL*** eDMX devices on your network so it's critical to separate off the device requiring reset. We recommend directly connecting a computer and eDMX device using a crossover cable so there's no chance of additional eDMX devices accidentally being reset too.

Several warnings are presented before the command is sent.

5. COMPATIBLE SOFTWARE

Art-Net and DMX512 are the most commonly used lighting control protocols with roots in simple theatrical light dimming. These days almost any lighting or stage effect equipment may be controlled using DMX512 (with explicit exclusion of anything involving potentially dangerous operations such as pyrotechnics) including moving lights, LED screens, fog machines and laser displays.

The DMXking.com eDMX4 DIN unit is a 4 universe Art-Net device designed for use with computer based show control software. It replaces an entire lighting console allowing the user to perform sophisticated shows with little more than a laptop. There are many free and commercial software packages available and by selecting Art-Net as your DMX device compatibility is guaranteed.

The following tables are by no means a definitive guide to Art-Net compatible software however it's a good starting point.

CONTROLLERS

LightFactory	http://www.lifact.com/
Venue Magic	http://www.venuemagic.com/
FreeStyler	http://www.freestylerdmx.be/
MagicQ – ChamSys (Windows, Mac, Linux)	http://www.chamsys.co.uk/download
LumiDMX	http://www.lumidmx.com/
LX Series (Mac OS-X)	http://lx.claudeheintzdesign.com/
Q Lighting Controller+ (Linux, Mac OS-X, Windows)	http://qlcplus.sourceforge.net/
LSC Clarity (Windows, Mac OS-X)	http://www.lsclighting.com/products/clarity-control-system/clarity-for-pcmac
Max – Cycling 74 (Windows, OS-X)	http://cycling74.com/products/maxmspjitter/
White Cat Lighting Board	http://www.le-chat-noir-numerique.fr/
TJShow	http://www.tjshow.com/
MADRIX – LED Lighting Control	http://www.madrix.com/
DMXControl	http://www.dmxcontrol.org/
vvv – a multipurpose toolkit	http://vvvv.org/
Enttec D-Pro	http://www.enttec.com/
D::Light	http://www.nicole-banana.com/
Chameleon (Mac)	http://www.maclightingsoftware.com/
Lightjams – Live interactive control MIDI / TUIO	http://www.lightjams.com/
StageSoft – CHROMA	http://www.stagesoft.com/chroma.html
Martin M-PC Free Edition	http://www.martin.com/controllersupport/m-pc_software.html
ShowMagic	http://www.showmagic.com/

MEDIA SERVERS / VJ

ArKaos MediaMaster Pro, MediaMasterExpress, Media Server	http://www.arkaos.net/category/index.php?catid=2
Resolume Avenue 3	http://www.resolume.com/
MXWendler FXServer	http://www.mxwendler.net/Product.4.0.html
Kineme Art-Net Tools for Quartz Composer	http://kineme.net/product/ArtNetTools
TroikaTronix – Isadora	http://troikatronix.com/isadora.html

VISUALIZERS

Capture	http://www.capturesweden.com/
WYSIWYG	http://www.cast-soft.com/
ESP Vision	http://www.espvision.com/
SoftPlot	http://www.stageresearch.com/products/SoftPlot9/SoftPlot9.aspx
LD Assistant	http://www.ldassistant.com/

MOBILE APPS

Luminair (iPhone/iPad)	http://www.synthe-fx.com/products/luminair
LightingPad (iPhone/iPad)	http://www.alcorn.com/products/lightingpad/index.html
ArtNet DMX Remote (iOS)	http://lightning-dmxcontrol.com/
LED Remote (iOS)	http://arminarzani.com/en/

6. UPDATING FIRMWARE

A built in boot loader permits updating of the eDMX4 DIN firmware. Note only signed encrypted firmware files from DMXking.com can be successfully loaded.

Firmware files are distributed with the eDMX Configuration Utility and are copied automatically to the installation directory. If a later firmware version hasn't yet been packaged with the utility you can copy the .enc file into the installation directory manually.

Future firmware releases for this product will be in the form 0093-501-[VersionMajor].[VersionMinor].enc

7. TECHNICAL SPECIFICATIONS

- Dimensions: 70x68x35mm (WxHxD)
- Weight: 0.07kg
- DC Power input 7-28Vdc, 2.5W max.
- DMX512 connector: RJ45 or 3 way terminal block
- ANSI E1.11-2008, E1.20-2006 and E1.31-2009 compliant
- Internal DMX512-A line biasing termination as per ANSI E1.20 RDM requirements
- Art-Net, Art-Net II, Art-Net III and ANSI E1.31 / sACN support
- Both HTP and LTP merging of 2 Art-Net streams per port
- IPv4 Addressing
- DMX512 Frame Rate: Adjustable per port
- Operating temperature 0°C to 70°C

8. WARRANTY

DMXKING.COM HARDWARE LIMITED WARRANTY

What is covered

This warranty covers any defects in materials or workmanship with the exceptions stated below.

How long coverage lasts

This warranty runs for one year from the date of shipment from an authorized DMXking.com distributor.

What is not covered

Failure due to operator error or incorrect application of product. Opening the unit voids the warranty.

What DMXking.com will do

DMXking.com will repair or replace, at its sole discretion, the defective hardware. Return shipping costs from our service facility in New Zealand shall be free of charge.

How to obtain service

Contact DMXking.com directly by email sales@dmxking.com

9. DECLARATIONS (FCC & CE)

FEDERAL COMMUNICATIONS COMMISSION (FCC) DECLARATION OF CONFORMITY

Responsible Party: JPK Systems Limited
PO Box 493
Pukekohe 2340
New Zealand

declares that the product eDMX4 DIN complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

EEC DECLARATION

We

JPK Systems Limited
PO Box 493
Pukekohe 2340
New Zealand

declare under our sole responsibility that our product eDMX4 DIN conforms to the requirements of Council Directives 89/336/EEC and 73/23/EEC and therefore complies with the requirements of Council Directive 73/23/EEC, (The Low Voltage Directive) on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits as amended by Article 13 of Council Directive 93/68/EEC

- EN 55103-1
- EN 60065

Signed: Jason Kyle

Date: 1 August 2014

Position: Managing Director